



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/511,292 02/23/00 NAGASHIMA

J H-204325

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EXAMINER

ATKINSON, C

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 01/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/511,292

Applicant(s)

Nagashima et al.

Examiner

D. K. Hoon

Group Art Unit

3743

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 10/17/2000
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-12 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-12 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Art Unit: 3743

Response to Amendment

Applicant's arguments filed 10/19/2000 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 10 is rejected under 35 U.S.C. § 102(b) as being anticipated by Omori.

The patent of Omori in Figures 1 and 6-9 discloses applicant's claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims

Art Unit: 3743

under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claim 10 is rejected under 35 U.S.C. § 103 as being unpatentable over Paterson in view of Omori. The patent of Paterson discloses all the claimed features of the invention with the exception of generating a constant pressure across the module and the heat sinking member.

The patent of Omori in Figures 1 and 6-9 discloses a plurality of spring clips which inherently generate a constant pressure across a module and a heat sinking member for the purpose of supplementing a single spring force so as to provide higher holding reliability. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Paterson generating a constant pressure across the module and the heat sinking member with a plurality of spring clips for the purpose of supplementing a single spring force so as to provide higher holding reliability as disclosed in Omori.

Claim 11 is rejected under 35 U.S.C. § 103 as being unpatentable over Paterson in view of Omori as applied to claim 10 above, and further in view of Jackson et al. or Wolgemuth et al. The patent of Paterson as modified, discloses all the claimed features of the invention with the exception of a sealing member.

The patents of Jackson et al. or Wolgemuth et al. in Figure 2 and Figure 3 respectively, disclose that it is known to have a sealing member between a power module and a heat sinking

Art Unit: 3743

member for the purpose of directly contacting the power module with the cooling fluid. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Paterson as modified, a sealing member between a power module and a heat sinking member for the purpose of directly contacting the power module with the cooling fluid as disclosed in Jackson et al. or Wolgemuth et al.

Claim 11 is rejected under 35 U.S.C. § 103 as being unpatentable over Omori in view of Jackson et al. or Wolgemuth et al. The patent of Omori as modified, discloses all the claimed features of the invention with the exception of a sealing member.

The patents of Jackson et al. or Wolgemuth et al. in Figure 2 and Figure 3 respectively, disclose that it is known to have a sealing member between a power module and a heat sinking member for the purpose of directly contacting the power module with the cooling fluid. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Omori, a sealing member between a power module and a heat sinking member for the purpose of directly contacting the power module with the cooling fluid as disclosed in Jackson et al. or Wolgemuth et al.

Claims 1-9 are rejected under 35 U.S.C. § 103 as being unpatentable over Wolgemuth et al. in view of Kwak. The patent of Wolgemuth et al. in Figures 1-4 discloses all the claimed features of the invention with the exception of spring clips in recesses and indentations.

The patent of Kwak in Figures 2 and 7 discloses that it is known to have C-shaped spring clips in recesses and indentations for the purpose of securing a power module to a heat sinking

Art Unit: 3743

member. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Wolgemuth et al. C-shaped spring clips in recesses and indentations for the purpose of securing a power module to a heat sinking member as disclosed in Kwak.

Claim 12 is rejected under 35 U.S.C. § 103 as being unpatentable over Wolgemuth et al. in view of Kwak as applied to claims 1-9 above, and further in view of Omori. The patent of Wolgemuth et al. as modified, discloses all the claimed features of the invention with the exception of a plurality of pairs of spring clips.

The patent of Omori in Figures 1 and 6-9 discloses a plurality of pairs of spring clips which inherently generate a constant pressure across a module and a heat sinking member for the purpose of supplementing a single spring force so as to provide higher holding reliability. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Wolgemuth et al. as modified, a plurality of pairs of spring clips for the purpose of supplementing a single spring force so as to provide higher holding reliability as disclosed in Omori.

Response to Arguments

Regarding applicant's concerns directed toward amended claim 10, Omori in Figures 1 and 6-9 discloses applicant's claimed invention. Also, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Paterson generating a constant pressure across the module and the heat sinking member with a plurality of spring clips

Art Unit: 3743

for the purpose of supplementing a single spring force so as to provide higher holding reliability as disclosed in Omori.

Applicant's concerns directed toward claim 1 are not found persuasive. First, claim 1 does not require more than two clips nor does claim 1 require generating a consistent pressure across the seal between the cooling apparatus and the integrated circuit. However, Kwak, in Figures 2-4A, discloses each spring clip exerting a substantially equal force to retain the module on the heat sinking member. Furthermore, Wolgemuth et al., in Figures 1-4, discloses a liquid coolant flow and liquid proof seal.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Also, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ as the fastening members in Wolgemuth et al. C-shaped spring clips in recesses and indentations

Art Unit: 3743

for the purpose of securing a power module to a heat sinking member as disclosed in Kwak.

Regarding newly added claim 12, Omori, in Figures 1 and 6-9, discloses a plurality of pairs of spring clips.

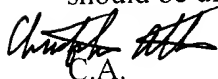
Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Atkinson whose telephone number is (703) 308-2603.


C.A.

January 1, 2001

CHRISTOPHER ATKINSON
Principal Examiner